

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-36 (Canceled)

Claim 37 (Allowed): An imaging apparatus comprising:

an image sensing unit adapted for sensing an electromagnetic wave image of a subject; and

a controller adapted for generating a first signal for permitting an irradiating unit to irradiate an electromagnetic wave and a second signal for initializing said image sensing unit, so as to overlap a first period and a second period,

wherein the first period is an interval between a timing when the first signal is outputted from said controller and a timing when the electromagnetic wave is outputted from said irradiating unit, and

wherein the second period is an interval between a timing when the second signal is outputted from said controller and a timing when the initialization of said image sensing unit has been completed.

Claim 38 (Allowed): An apparatus according to claim 37, wherein said controller controls so that one of the first signal and the second signal starts after the other has started and before it has stopped.

Claim 39 (Allowed): An apparatus according to claim 37, wherein said image sensing unit has a photo-electric conversion device which outputs a signal in accordance with an electromagnetic wave and the second period is an interval between a timing when the second signal, for initializing said photo-electric conversion device, is outputted from said controller and a timing when the initialization of said photo-electric conversion device has been completed.

Claim 40 (Allowed): An apparatus according to claim 39, wherein the second period is an interval for a pre-discharge of said photo-electric conversion device.

Claim 41 (Allowed): An apparatus according to claim 37, wherein said image sensing unit has a grid which absorbs scattered rays from the subject, and said controller generates a third signal for driving said grid so as to overlap the first, the second and a third period, wherein the third period is an interval between a timing when the third signal is outputted from said controller and a timing when the initialization of said grid has been completed.

Claim 42 (Allowed): An apparatus according to claim 41, wherein the initialization of said grid is that a position and a moving speed of said grid should reach a target.

Claim 43 (Allowed): An apparatus according to claim 37, wherein said image sensing unit has a photo-electric conversion device which outputs a signal in accordance with an electromagnetic wave and a grid which absorbs scattered rays from the subject, and said controller generates a third signal for driving said grid so as to overlap the first, the second and a third period, wherein the third period is an interval between a timing when the third signal is

outputted from said controller and a timing when the initialization of said grid has been completed.

Claim 44 (Allowed): An apparatus according to claim 37, wherein said controller generates the first signal so that an irradiation of the electromagnetic wave starts at a timing when a fourth period is elapsed after said controller has received a fourth signal which instructs a start of imaging, the fourth period being the longer one of the first and second period.

Claim 45 (Allowed): An apparatus according to claim 41, wherein said controller generates the first signal so that an irradiation of the electromagnetic wave starts at timing when a fourth period is elapsed after said controller has received a fourth signal which instructs a start of imaging, the fourth period being the longest one of the first, second and third period.

Claim 46 (Allowed): An imaging system comprising:

an irradiating unit adapted for irradiating an electromagnetic wave;

an image sensing unit adapted for sensing an electromagnetic wave image of a subject using the electromagnetic wave; and

a controller adapted for generating a first signal for permitting said irradiating unit to irradiate the electromagnetic wave and a second signal for initializing said image sensing unit, so as to overlap a first period and a second period,

wherein the first period is an interval between a timing when the first signal is outputted from said controller and a timing when the electromagnetic wave is outputted from said irradiating unit, and

wherein the second period is an interval between a timing when the second signal is outputted from said controller and a timing when the initialization of said image sensing unit has been completed.

Claim 47 (Allowed): A method adapted to an imaging apparatus including an image sensing unit adapted for sensing an electromagnetic wave image of a subject, comprising a step of:

controlling a controller to generate a first signal for permitting an irradiating unit to irradiate an electromagnetic wave and a second signal for initializing the image sensing unit, so as to overlap a first period and a second period,

wherein the first period is an interval between a timing when the first signal is outputted from the controller and a timing when the electromagnetic wave is outputted from the irradiating unit, and

wherein the second period is an interval between a timing when the second signal is outputted from the controller and a timing when the initialization of the image sensing unit has been completed.

Claim 48 (Allowed): A method according to claim 47, wherein in said controlling step, one of the first signal and the second signal is started after the other has started and before it has stopped.

Claim 49 (Allowed): A method according to claim 47, wherein the image sensing unit has a photo-electric conversion device which outputs a signal in accordance with an

electromagnetic wave and the second period is an interval between a timing when the second signal, for initializing the photo-electric conversion device, is outputted from the controller and a timing when the initialization of the photo-electric conversion device has been completed.

Claim 50 (Allowed): A method according to claim 49, wherein the second period is an interval for a pre-discharge of the photo-electric conversion device.

Claim 51 (Allowed): A method according to claim 47, wherein the image sensing unit has a grid which absorbs scattered rays from the subject, and said controlling step includes controlling the controller to generate a third signal for driving the grid so as to overlap the first, the second and a third period, wherein the third period is an interval between a timing when the third signal is outputted from the controller and a timing when an initialization of the grid has been completed.

Claim 52 (Allowed): A method according to claim 51, wherein the initialization of the grid is that a position and a moving speed of the grid should reach a target.

Claim 53 (Allowed): A method according to claim 47, wherein the image sensing unit has a photo-electric conversion device which outputs a signal in accordance with an electromagnetic wave and a grid which absorbs scattered rays from the subject, and said controlling step includes controlling the controller to generate a third signal for driving the grid so as to overlap the first, the second and a third period, wherein the third period is an interval

between a timing when the third signal is outputted from the controller and a timing when an initialization of said grid has been completed.

Claim 54 (Allowed): A method according to claim 47, wherein in said controlling step, the first signal is generated so that an irradiation of the electromagnetic wave starts at a timing when a fourth period is elapsed after the controller has received a fourth signal which instructs a start of imaging, the fourth period being the longer one of the first and second period.

Claim 55 (Allowed): A method according to claim 51, wherein in said controlling step, the first signal is generated so that an irradiation of the electromagnetic wave starts at a timing when a fourth period is elapsed after the controller has received a fourth signal which instructs a start of imaging, the fourth period being the longest one of the first, second and third period.

Claim 56 (Allowed): A computer-readable storage medium which stores a program for executing a method adapted to an imaging apparatus including an image sensing unit adapted for sensing an electromagnetic wave image of a subject, the method comprising a step of:

controlling a controller to generate a first signal for permitting an irradiating unit to irradiate an electromagnetic wave and a second signal for initializing the image sensing unit, so as to overlap a first period and a second period,

wherein the first period is an interval between a timing when the first signal is outputted from the controller and a timing when the electromagnetic wave is outputted from the irradiating unit, and

wherein the second period is an interval between a timing when the second signal is outputted from the controller and a timing when the initialization of the image sensing unit has been completed.

Claims 57-69 (Canceled)

Claim 70 (New): An imaging apparatus comprising:

an irradiating unit for irradiating an electromagnetic wave;

a grid which is arranged in irradiating path of the electromagnetic wave;

a grid moving unit for moving said grid in the irradiating path;

an image sensing unit for converting the electromagnetic wave to image data, said image sensing unit having a plurality of image sensing elements;

a storage device for storing combinations of a first time interval which is a time interval between a timing when an irradiation permission signal is sent to said irradiating unit and a timing when an irradiation starts, a second time interval which is a time interval between a timing when said grid moving unit starts driving of said grid and a timing when said grid reaches a target position and a target speed, and a third time interval in which said image sensing unit is initialized, so that each of the combinations of the first time interval, the second time interval and the third time interval corresponds to each of a plurality of image sensing conditions;

an image sensing condition instructing device for inputting an image sensing condition; and

a controller for controlling said irradiating unit, said grid moving unit and said image sensing unit,

wherein, said controller selects a combination of the first time interval, the second time interval and the third time interval corresponding to the image sensing condition instructed by said image sensing condition instructing device, and controls so that a timing when said irradiating unit starts an irradiation, a timing when said grid reaches the target position and the target speed, and a timing when an initialization driving of said image sensing unit is completed coincide with each other, based on the selected combination.

Claim 71 (New) An apparatus according to claim 70, wherein said controller transmits the irradiation permission signal, a driving start signal of said grid moving unit and a start signal of the initialization driving at a timing for coincidence of a timing when said irradiating unit starts an irradiation, a timing when said grid reaches the target position and the target speed, and a timing when an initialization driving of said image sensing unit is completed.

Claim 72 (New) An apparatus according to claim 70, further comprising an image sensing instruction unit for inputting an image sensing request signal, wherein said controller controls so that a longest time in the first time interval, the second time interval and the third time interval corresponding to the image sensing condition instructed by said image sensing condition instructing device coincide with a time interval between a timing when the image sensing request signal is inputted and a timing when said irradiating unit starts irradiation.

Claim 73 (New). An apparatus according to claim 70, wherein said controller controls to stop a moving control of said grid moving unit after an actual irradiation time is elapsed from the timing when said irradiating unit starts an irradiation, and to start reading of a signal from said image sensing unit after a predetermined time elapsed from the timing when the moving control has been stopped.

Claim 74 (New). An apparatus according to claim 70, further comprising an electromagnetic wave detecting device for detecting an amount of the electromagnetic wave, wherein said controller controls to stop a moving control of said grid moving unit based on an output signal of said electromagnetic wave detecting device.

Claim 75 (New) An imaging apparatus comprising:

- an irradiating unit for irradiating an electromagnetic wave;
- an image sensing unit for converting the electromagnetic wave to image data, said image sensing unit having a plurality of image sensing elements;
- a storage device for storing combinations of a first time interval which is a time interval between a timing when an irradiation permission signal is sent to said irradiating unit and a timing when an irradiation starts, and a second time interval in which said image sensing unit is initialized, so that each of the combinations of the first time interval and the second time interval corresponds to each of a plurality of image sensing conditions;
- an image sensing condition instructing device for inputting an image sensing condition; and
- a controller for controlling said irradiating unit and said image sensing unit,

wherein, said controller selects a combination of the first time interval and the second time interval corresponding to the image sensing condition instructed by said image sensing condition instructing device, and controls so that a timing when said irradiating unit starts an irradiation and a timing when an initialization driving of said image sensing unit is completed coincide with each other, based on the selected combination.

Claim 76 (New). An apparatus according to claim 75, wherein said controller transmits the irradiation permission signal and a start signal of the initialization driving at a timing for coincidence of a timing when said irradiating unit starts an irradiation and a timing when an initialization driving of said image sensing unit is completed.

Claim 77 (New). An imaging apparatus comprising:

a grid which is arranged in irradiating path of the electromagnetic wave;

a grid moving unit for moving said grid in the irradiating path;

an image sensing unit for converting the electromagnetic wave to image data, said image sensing unit having a plurality of image sensing elements;

a storage device for storing combinations of a first time interval which is a time interval between a timing when said grid moving unit starts driving of said grid and a timing when said grid reaches a target position and target speed, and a second time interval in which said image sensing unit is initialized, so that each of the combinations of the first time interval and the second time interval corresponds to each of a plurality of image sensing conditions;

an image sensing condition instructing device for inputting an image sensing condition; and

a controller for controlling said grid moving unit and said image sensing unit, wherein, said controller selects a combination of the first time interval and the second time interval corresponding to the image sensing condition instructed by said image sensing condition instructing device, and controls so that a timing when said grid reaches the target position and the target speed and a timing when an initialization driving of said image sensing unit is completed coincide with each other, based on the selected combination.

Claim 78 (New). An apparatus according to claim 77, wherein said controller transmits a driving start signal of said grid moving unit and a start signal of the initialization driving at a timing for coincidence of a timing when said grid reaches the target position and the target speed and a timing when an initialization driving of said image sensing unit is completed.